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WASHINGTON, D.C. 20301

25 MAY 1973

SI-TSU-71,179/DC-7B

MEMORANDUM FOR THE ASSISTANT SECRETARY OF DEFENSE (INTELLIGENCE)

SUBJECT: ARDF in Southeast Asia

1. In response to your request, DIA has reviewed the current ARDF situation in Southeast Asia. Although focused on the deficiency in desired coverage of RVN Military Region I targets, the total SEA ARDF picture was examined. Specifically, we reviewed the current fix requirements, the current disposition of enemy forces, disposition of US and RVNAF ARDF assets, problem areas and possible actions to improve the situation.

2. Our study draws heavily from the views of Commander USSAG and NSA, since they are closely associated with the day-to-day ARDF effort. Our analysis leads to the conclusion that there has been a severe decline in the fix rate and target coverage, compared to that of a year ago. This decline is not surprising, however, when consideration is given to:

a. Changing US force deployment - During the heat of the war the US had approximately 120 ARDF aircraft, flying about 450 sorties per week. We now have only 28 US (22 USAF EC-47's and 6 US Army U-21's) and 36 (33 EC-47's and 3 U-6's) RVNAF aircraft generating approximately 200 sorties per week.

b. Changing enemy situation - Comparison of the enemy AAA/SAM capability in Northern RVN MR-1 and the Southern Lao Panhandle area reveals that a significant improvement in their air defense capability has been made since the cease fire, e.g., establishment of SAM sites at Khe Sanh, more AAA, etc. This improved enemy capability is the result of the decline in US involvement and air operations against the AAA/SAM sites.

3. Given these factors there are only two courses of action which might afford improvement in the situation:

a. First, improved management and mission allocations from current resources. Our analysis indicates that no improvement in coverage of MR-1 would be gained from outside involvement in the USSAG Commander's

DIA review(s) completed.

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NSA review completed

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allocation of weekly ARDF missions. The governing factor for decreased coverage of this area is not management, it is the vastly increased AAA/SAM threat.

(1) With the threat in mind, the Commander USSAG allocates sorties on the recommendations of the J-2 and ARDF Coordination Center (ACC) at [REDACTED]. Allocations of US effort are projected on availability of aircraft and priorities are based on requests submitted by US activities in SEA; specifically the US Ambassador to Laos, [REDACTED] 25X1
[REDACTED] US Ambassador to Cambodia, DAO/DoD SPECREP Saigon, J-2 USSAG, command priorities and ongoing tactical activity, as well as national needs.

(2) Similarly, the RVN Directorate General of Technical Services (DGTS) allocates sorties based on the current situation and high interest areas of the GVN, and toward the fulfillment of national and tactical requirements. Acknowledging a reduced DGTS frag rate, due to lack of trained crews and manning shortages, three other factors impact upon RVNAF ability to effectively cover MR-1: weather, maintenance, and, most significantly, the enemy AAA/SAM threat.

(3) The service ceiling, speed, and maneuverability of the EC-47 platform make it imprudent to expose these sensitive and limited resources to such high risks. Unfortunately, these high threat areas are the very areas of highest intelligence interest. Rebased of aircraft in this instance offers no solution to the problem.

(4) It should be noted that no US EC-47 aircraft have been fraged into this area since the Easter offensive of last year. Coverage had been provided by Army U-21 assets, which were more maneuverable in the hostile environment then extant, prior to their redeployment from RVN. The increased threat would now preclude using U-21's.

b. Second, development of an improved ARDF capability on an aircraft which has a higher altitude and flight endurance capability than either the EC-47 or U-21. The JCS studied the possibility of developing an improved ARDF capability earlier this year. It was determined that the C-130 aircraft was the most likely airframe to be modified. However, it was concluded by the Joint Chiefs of Staff, on 5 March 1973, that the Air Force did not have C-130 aircraft available to modify for this purpose and, that the cost of 9.6 to 12.6 million for modification and lead time of five to six months before deployment was prohibitive.

4. Recognizing that the Commander USSAG, with advice from appropriate activities, is managing available resources in accordance with the dictates of the current situation, the lack of an improved ARDF capability, and the threat,


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Brigadier General Jacobson, J-2, USSAG in a recent message to DIA, summed the situation as follows: "USSAG believes that the potential intelligence return does not warrant the risk of possible loss of life, aircraft and sensitive information. Hence, no US ARDF missions are flown in Northern MR-1 nor any other AAA operating area. Similarly, neither does the RVNAF commit their limited assets to high risk areas. The level of ARDF coverage to which the intelligence community has been accustomed is steadily diminishing, and in view of the situation there does not appear to be any way to reverse this trend."

5. I concur with General Jacobson's assessment and, operating within the present fiscal and political constraints on US involvement in SEA, it appears unlikely that additional or alternate US airborne platforms/equipment can be made available to augment the present effort. Therefore, accepting that the Commander USSAG is well aware of our requirements, along with those of other US activities in SEA, I recommend that we continue to rely on his judgement for the utilization of ARDF assets in attempting to satisfy all requests placed on him.

1 Enclosure
Discussion Concerning ARDF
in SEA (TSU)


V. P. de FOIX
Vice Admiral, USN
Director

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Discussion Concerning ARDF in SEA

1. In reviewing the problem as presented by Colonel Bush, OASD(I), the ARDF problem in RVN Military Region I could not be addressed in isolation. The problem necessitated review of total effort since US assets are based in Thailand and are required to cover areas other than MR-I, as well as looking at the GVN effort. The following questions and discussion items are relevant to the ARDF situation in SEA.

2. What are the desired fix requirements for SEA?

a. This question is difficult to quantify since it is desirable to have some units located daily, some two or three times per week, some weekly and others less often. Additionally, fix requirements change as units alter their activity and maneuver into tactical readiness conditions and position. In recognition of this type situation the WASAG Working Group "C", chaired by Mr. Carver, stated in a report to Dr. Kissinger in November 1972:

(1) The ability to accurately detect military unit movements in South Vietnam, Laos and Cambodia will continue to depend on the use of specifically configured EC-47 and U-21 aircraft. Because of the short range of these direction finding and collection aircraft, they must be operated from nearby Udorn, [REDACTED] For the immediately foreseeable future, about five missions in Laos, one in Cambodia, and ten in RVN (to cover GVN shortfalls, especially in MR's 1 and 2) will be needed daily to cover these targets. This same geographic coverage, but at a higher mission rate, has been conducted throughout the war. The nature of the individual mission will have to determine which aircraft type is to be employed.

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(2) The South Vietnamese, with US technical cryptologic support, are expected to provide primary airborne coverage (EC-47) of South Vietnam MR's 3 and 4. It is not feasible to consider Laotian or Cambodian airborne operations because:

(a) They do not have the special skills in sufficient numbers needed to fly the smaller aircraft on collection and direction finding missions.

(b) They have no existing capability to fly the larger aircraft.

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(c) They do not have sufficient technical skills and data needed to perform the collection and direction finding functions.

b. Bearing in mind the ever changing situations which affect locational requirements, NSA advises that the latest (as of 16 May 1973) weekly fix requirements, developed by the Field Commander are as follows: MR-1, 191; MR-2, 121; MR-3, 79; MR-4, 75; Laos, 180 and Cambodia 62. These figures represent the Commander's interpretation of national, as well as the tactical situation needs. Since the enemy must be communicating by radio when ARDF missions are being flown a direct correlation cannot be drawn between the number of hours to be flown, or mission allocations per area and fix requirement satisfaction. It is true that there is a better chance to meet the desired fix rate if large numbers of missions are flown, with long periods of time-over-target.

c. With the reduction of U.S. resources in RVN as a result of the "Treaty" a severe decline in our ability to follow the enemy was realized by most consumers long ago.

3. What is the current disposition of US ARDF assets and their ability/inability to operate effectively against targets in MR-1 from present bases, in view of increased AAA/SAM threat in Laos and MR-1?

a. Current six US Army U-21 (4-RU configured and 2-JU configured) aircraft are based at Udorn RTAFB; [REDACTED]

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b. Factors which impact on the ability to fly sorties into RVN MR-1 are:

Command restriction on all US manned aircraft not to overfly or approach within five nautical miles of AAA operating areas in Laos (high threat areas). Thus direct ingress/egress into MR-1 is not possible due to the mounting AAA threat in Steel Tiger, thereby necessitating circuitous routing to the South through Northern Cambodia, the RVN Central Highlands, and back north into the target area. (See maps at TAB "A" for disposition of AAA forces in Laos and TAB "B" for the latest PACAF no-fly areas). Additionally, there are no-fly restrictions concerning ICCS flight corridors in RVN which impact on the Commands ability to place aircraft in the desired target area at the proper time. Staging [REDACTED] would limit the EC-47 to less than one hour time-over-target. Presently, stationing of additional aircraft [REDACTED] is impractical due to ramp space and maintenance limitations. However, using [REDACTED] as a refuel point en route to and [REDACTED] would increase time-over-target by about one hour.

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4. What is the current disposition of GVN ARDF assets and their ability/inability to routinely operate from present bases against targets in MR-1?

a. Currently the GVN have ten EC-47 aircraft based at Da Nang, 23 EC-47 aircraft based at Tan Son Nhut (TSN), and three U-6 aircraft at Can Tho.

b. Factors which impact on GVN ARDF assets operating against targets in MR-1 are:

(1) The present programmed frag rate for aircraft staging from DA Nang is four sorties per day in Southern MR-1. The reduced frag rate (less than 50 percent of available aircraft) is due to the lack of trained crews. In addition to manning shortages, three other factors impact on the VNAF's ability to effectively cover MR-1: weather, maintenance and most important the enemy AAA/SAM threat. (See maps at TAB "C" for disposition of enemy AAA units in MR-1.) The service ceiling, speed and maneuverability of the EC-47 platform make it imprudent to expose sensitive and limited resources to high risks. Unfortunately these high risk/threat areas are generally the very areas of highest intelligence interest. Rebased of aircraft in this instance offers no solution to the problem. It is to be noted that no US EC-47 aircraft were tasked into the northern MR-1 area since the Easter offensive of last year; coverage was provided by US Army U-21 assets which were more survivable in the hostile environment then extant. The increased threat would now preclude even U-21 utilization. Regarding the aircraft based at TSN and Can Tho. Even without the enemy air defense threat, these assets do not have flying time capability to cover MR-1 targets. Equally important, they are required to cover targets of high interest to the GVN in MR's 3 and 4 and to help meet US fix requirements for these areas. (See maps at TAB D and E for disposition of enemy forces in MR 3 and 4).

5. What is the current allocation of ARDF missions for Laos (North and South), MR-1, MR-2, and Cambodia, to include rational for allocation?

a. Allocation of US ARDF sorties is accomplished weekly by the ARDF Coordination Center (ACC) and approved by the J-2, USSAG. For the period 14-25 May allocations are as follows: Barrel Roll/PDJ, 21 sorties; Steel Tiger, 21 sorties; Cambodia, 20 sorties; and RVN MR-2 (ARDF areas 6 and 7), 35 sorties.

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b. Allocation priorities are determined within USSAG J-2, based upon weekly requests submitted by US activities in SEA. Specifically, SSO Laos (for AmEmb Vientiane), DAO/DODSPECREP Saigon, USSAG J-2 elements, command priorities and the ongoing tactical activity.

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c. The allocation of 20 plus sorties to cover Cambodian targets is questioned by NSA, who contends that a lesser number would be adequate. In response, J-2 USSAG advised that due to the general lack of intelligence information (including COMINT), that the situation and priority of our operational effort against forces in Cambodia had dictated and justified such allocations. The goal, with this level of allocation, by other intelligence collection resources. (See maps at TAB F-J for disposition of enemy forces in Cambodia, Laos and RVN MR-2.)

6. Are there any operational or political commitments which govern coverage of MR-1 by US vs GVN assets?

a. There are no known political commitments which would preclude the use of US ARDF resources in MR-1, nor has there been a formalization of operating agreements as to areas of responsibility insofar as ARDF coverage is concerned. It is mutually agreed, by the field commander, the GVN and NSA, and the rest of the intelligence community must support the agreement, that duplication will be avoided. The present delineation evolved around the constraints of available bases (both VNAF) and 25X1 the location of ground based SIGINT support functions. Hence, the VNAF flies MR-1 based out of Da Nang and supported by the Da Nang processing center. VNAF also flies MR's 2 and 4 based out of TSN and Can Tho, supported by the Saigon processing center and the Can Tho site, respectively, MR-2 is covered by US ARDF resources based at 25X1

b. The mission coordination between USSAG and DGTS Saigon is accomplished by interface through DAO Saigon Special Representative (NCPR-VN) via the ACC. This is accomplished weekly as a matter of routine when preparing the upcoming tasking cycle, and on an Ad Hoc basis as developing situations dictate. Through ongoing coordination this area coverage arrangement has proven to be the most effective means of managing the limited resources available.

7. What is the adequacy of technical data now available for the ARDF effort?

Technical data available to the ARDF problem is judged to be acceptable in terms of both completeness and accuracy, and in consonance with the degree of COMINT analytical development.

8. What are the indications from ARDF and other sources (MRDF, COMINT etc.), of current levels of enemy activity in MR-1?

a. A general paucity of all-source intelligence information, including SIGINT and ARDF, limits the intelligence community's ability to accurately determine enemy order of battle, capabilities and intentions in MR-1. Although exact quantities are not known, indications are that the enemy has been able to infiltrate both personnel and logistical stores

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to reconstitute his forces in the area. Units are probably combat effective and capable of conducting offensive operations. The enemy apparently intends to maintain a viable "cease-fire" posture and control terrain and associated airspace. He appears disposed to suppressing allied efforts to discern or hinder his objectives.

b. Enemy activity in MR-1 should be viewed in two distinct areas. In the DMZ/Quang Tri province, COMINT and ARDF, and a limited amount of agent and POW interrogation reports are the primary sources of order of battle intelligence. The DGTS and VNAF ARDF are providing information on Thua Thien province. In southern MR-1 (Quang Nam, Quang Tin and Quang Ngai provinces) VNAF reconnaissance augments the aforementioned resources.

9. What is the general assessment of the GVN DGTS capabilities?

a. Collection -

(1) The DGTS voice intercept capability is better than that of the US, primarily due to the native language association.

(2) The DGTS manual Morse intercept effectiveness is not equal to that of the US, but they are improving as they gain experience.

b. ARDF -

Generally their ARDF operations are about equal to the US effort. There are problems, but none that can be solved in the immediate time frame. Basically, there is a shortage of front-end crews to fly the EC-47's. This takes time, training and trainable personnel to overcome. Both the quality and quantity of back-end (COMINT) crews appear to be acceptable.

c. Cryptanalysis, Traffic Analysis, and Reporting --



25X1

(2) The DGTS experience problems in traffic analysis identification and maintaining continuity. Here again, this is not an area that effectiveness and efficiency can be greatly accelerated as it takes experience and training. The DGTS is improving in this area and should continue to do so.

(3) The DGTS personnel are not accomplished in the reporting area. However, when comparing their background, the length of time they

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have been involved in this type activity, it is not surprising nor unexpected that they would have difficulty. They are improving and should continue to do so with over-the-shoulder assistance from NSA advisory personnel.

10. Findings. The DIA review of ARDF situation in SEA, particularly the severe shortage of coverage in Northern MR-1 concludes that the lack of coverage is the result of a high AAA/SAM threat and reliance on currently allocated resources, not mismanagement of these resources. Thus, working within the present fiscal and political constraints on US involvement in SEA, it appears unlikely that any recommendations from the Washington level will alter in any manner our ability to significantly improve the ARDF situation in MR-1.

11. Conclusions. In response to our request for recommendations to improve the situation, Brigadier General Jacobson, J-2, USSAG stated, "USSAG believes that the potential intelligence return does not warrant the risk of possible loss of life, aircraft and sensitive information. Hence, no US ARDF missions are flown in Northern MR-1 nor does RVNAF commit their limited assets into high risk areas. The level of ARDF coverage to which the intelligence community has been accustomed is steadily diminishing and in view of the situation there does not appear to be any way to reverse this trend." Given the existing constraints DIA shares this analysis.

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Appended document contains classified information within
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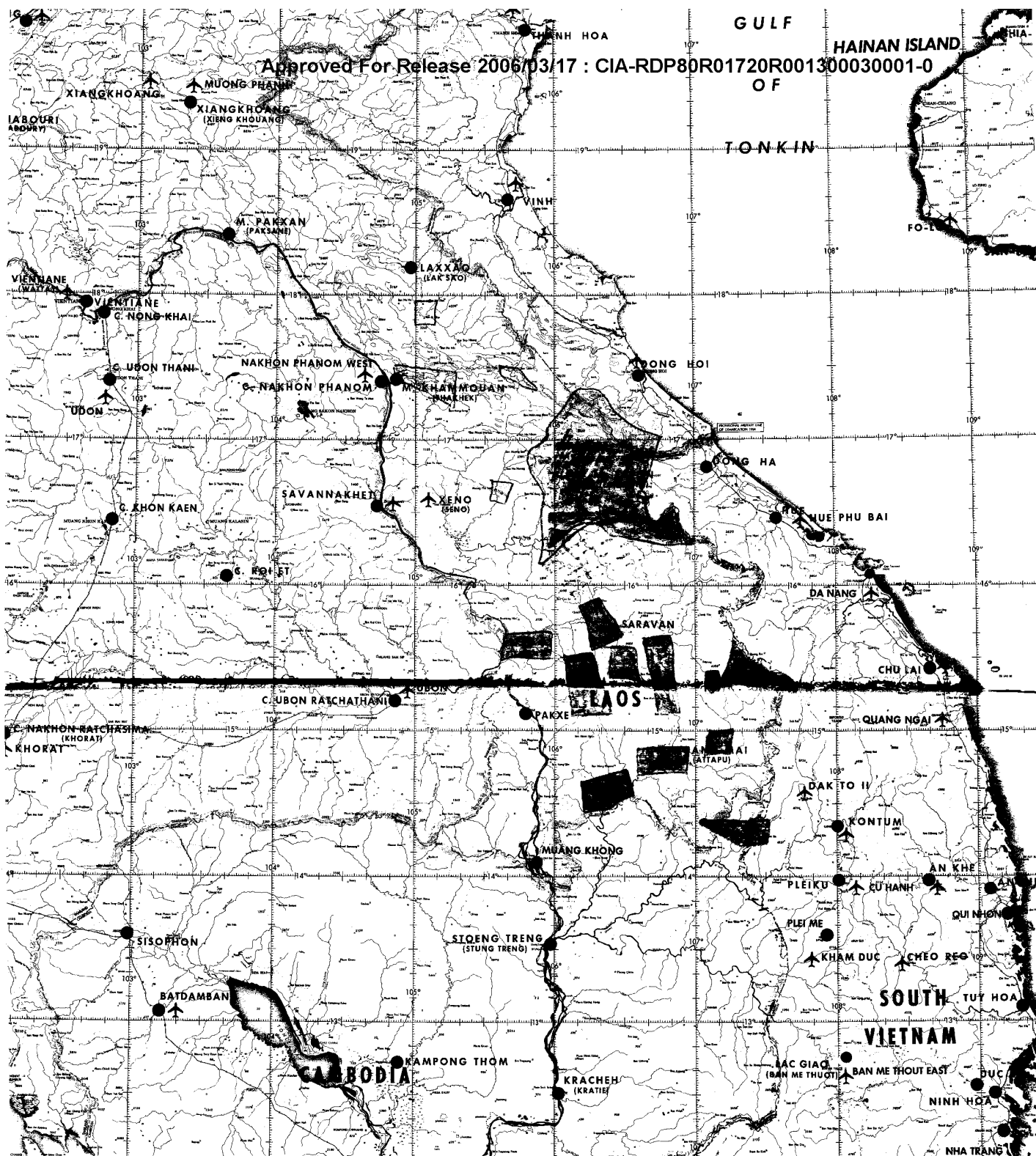
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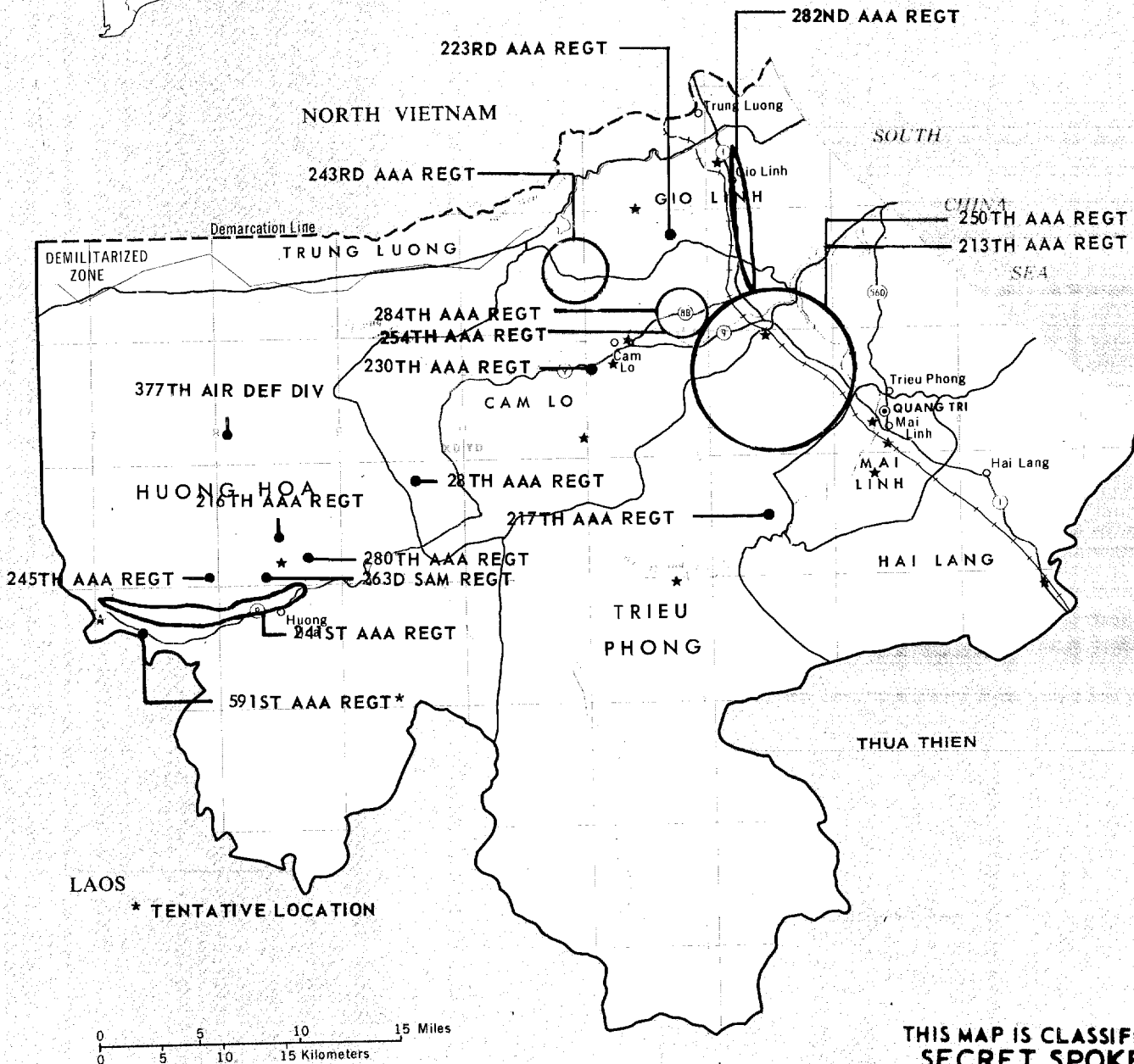
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SOUTH VIETNAM

QUANG TRI

PREPARED BY NSA

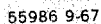
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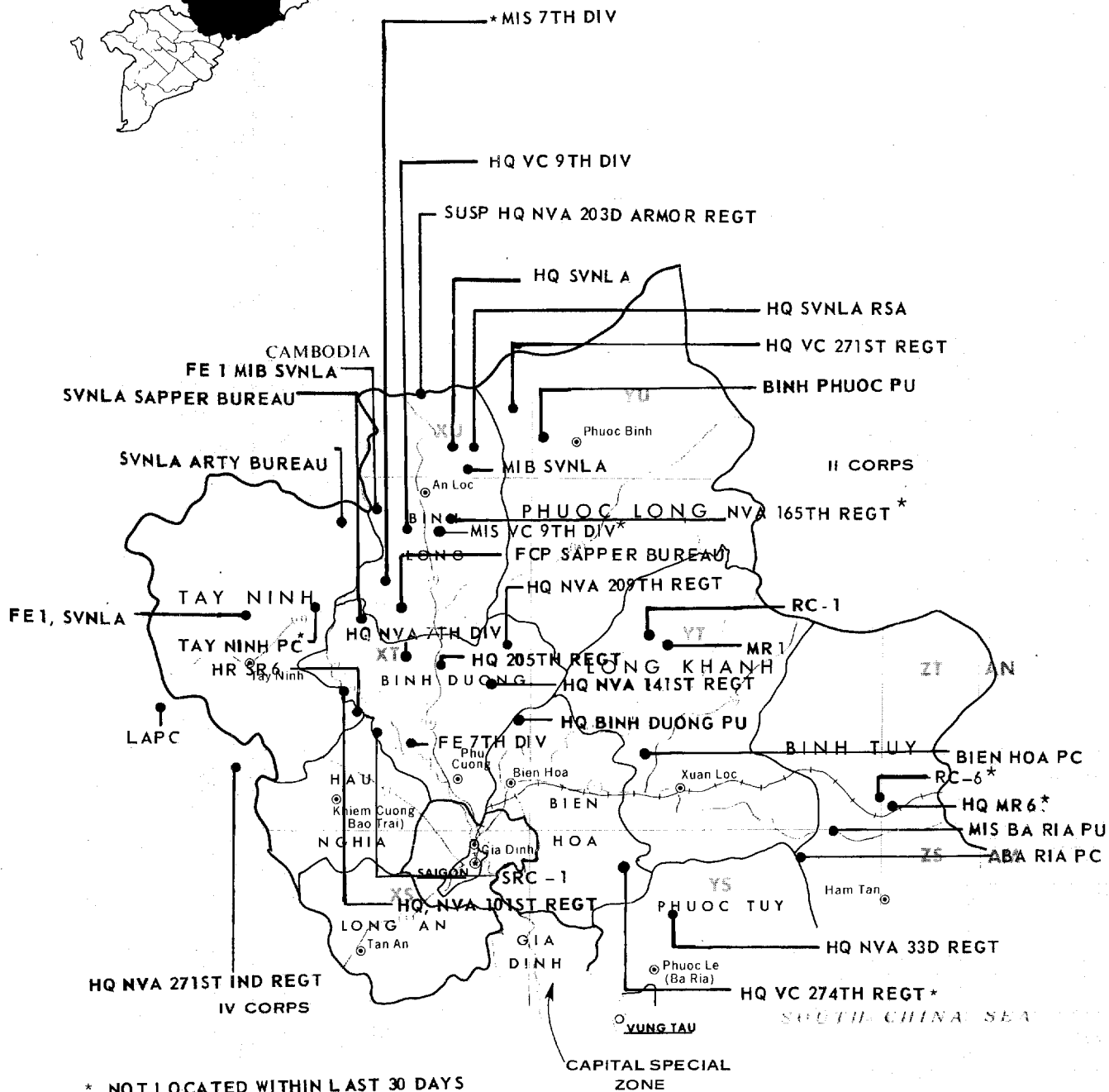


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SOUTH VIETNAM

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TAB
10

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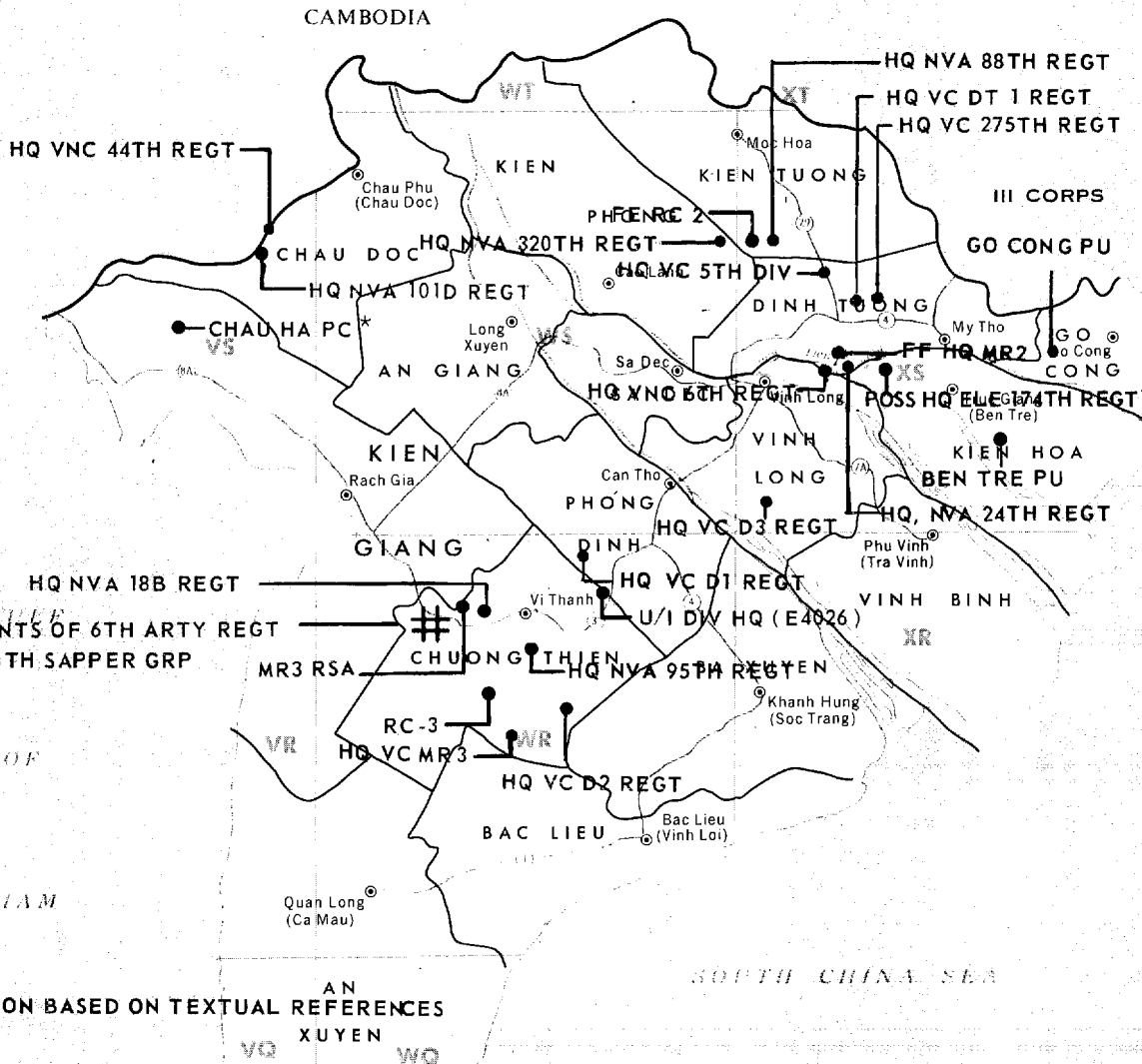
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RVN MILITARY REGION 4

SOUTH VIETNAM

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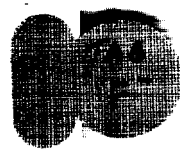
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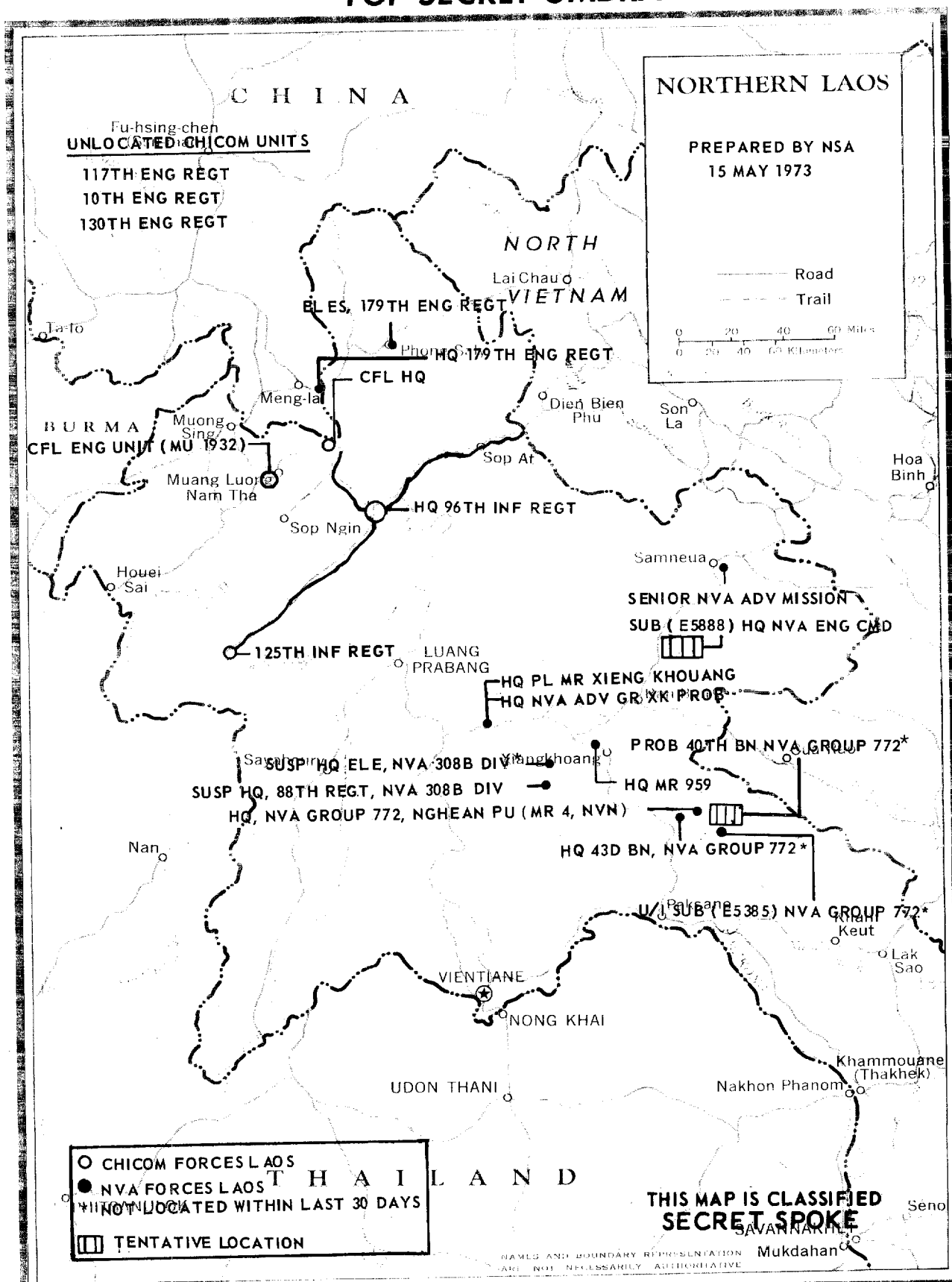
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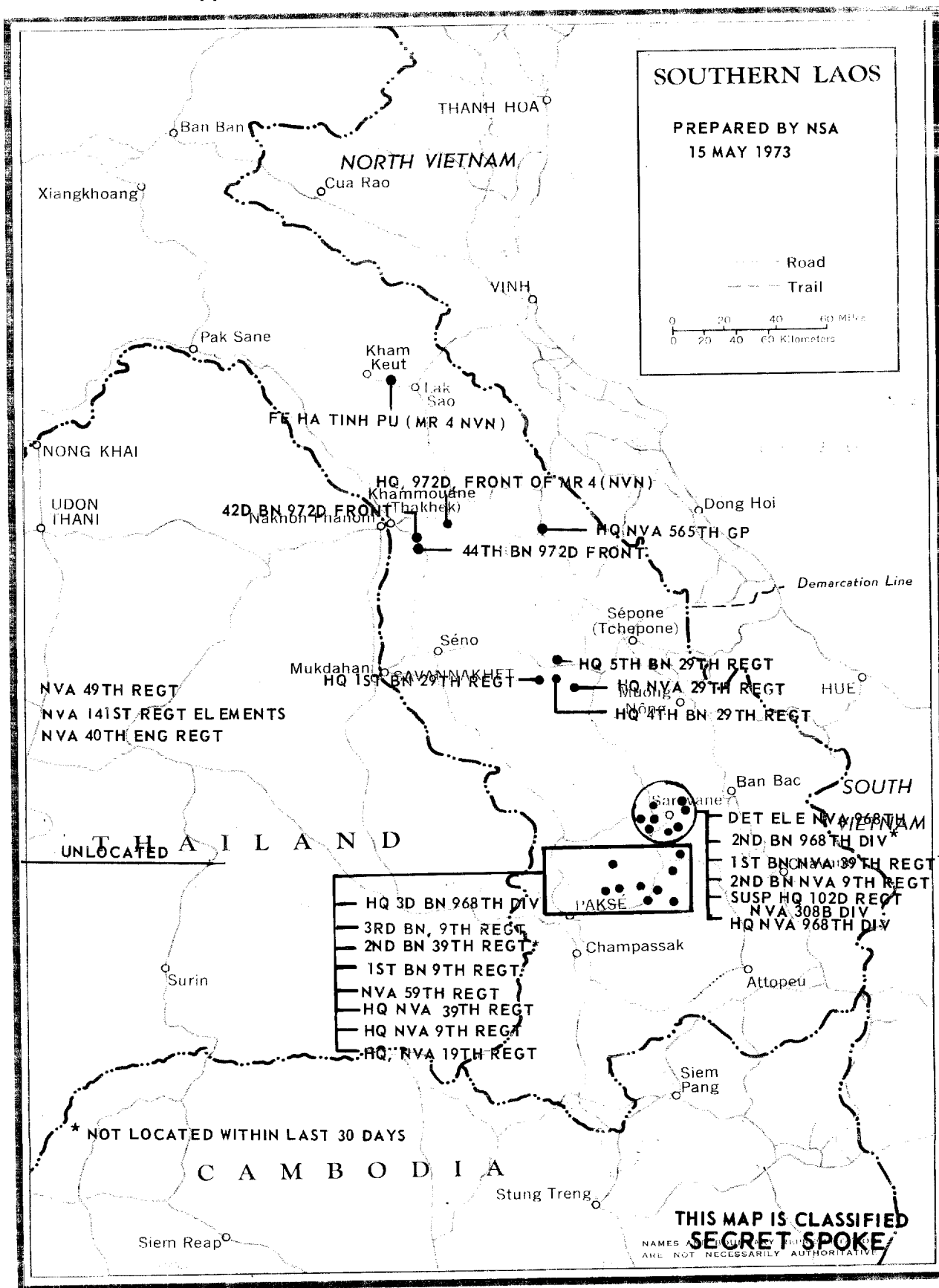
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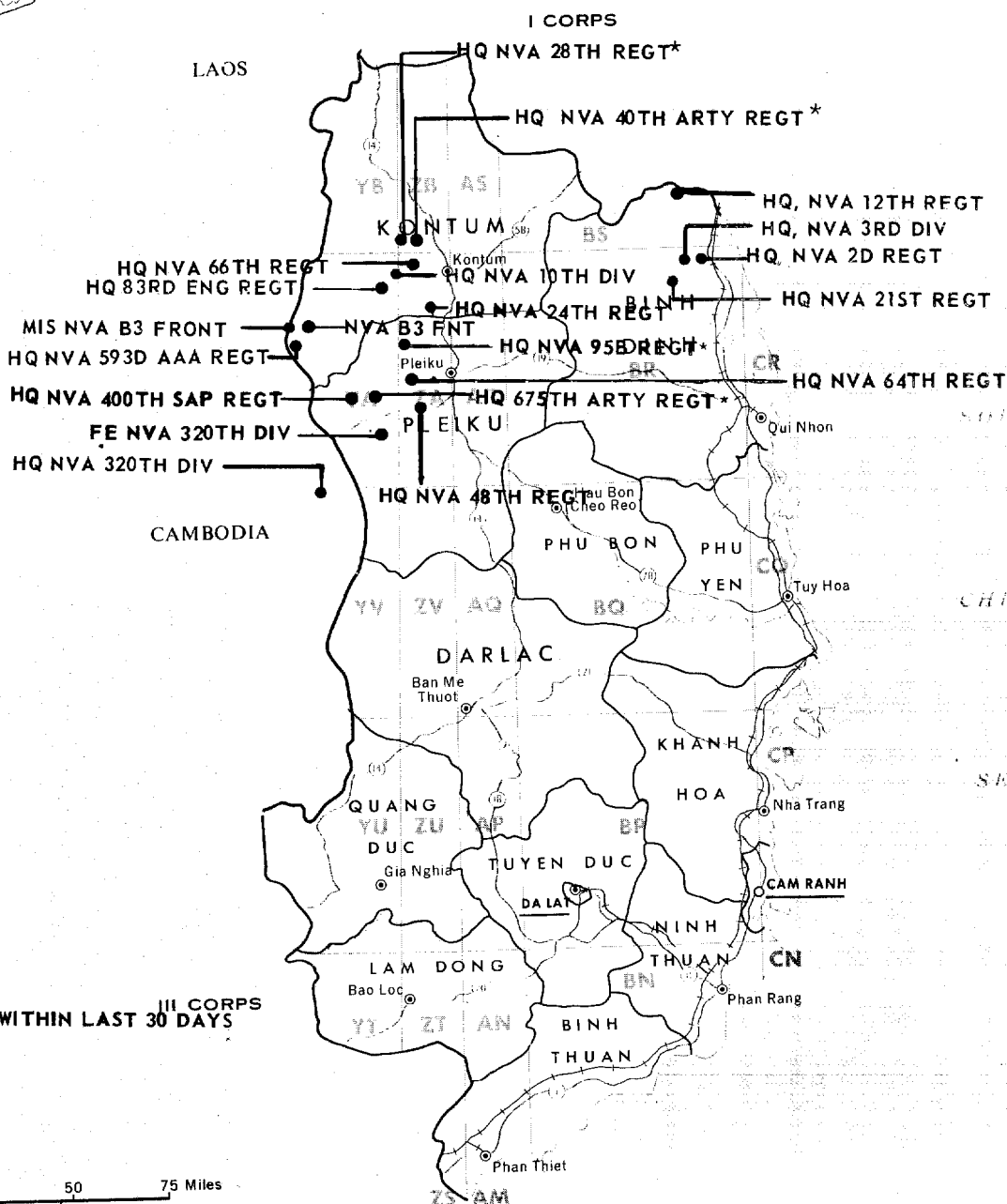
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RVN MILITARY REGION 2

SOUTH VIETNAM

PREPARED BY NSA

15 MAY 1973



* NOT LOCATED WITHIN LAST 30 DAYS

0 25 50 75 Miles
0 25 50 75 Kilometers

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